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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/734,994	12/12/2003	Henry A. Hill	09712-208001 / Z-353	2066	
26161 7	590 • 09/27/2005		EXAM	EXAMINER	
FISH & RICHARDSON PC			KIM, PETER B		
P.O. BOX 102	2		L DELINIE T	DAREN MINARER	
MINNEAPOL	IS, MN 55440-1022	•	ART UNIT	PAPER NUMBER	
			2851		

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Educations of time may be available under the provisions of 37 CF1 135(6), in no event, mover, may a reply be timely filed in the provision of time may be available under the provision of 37 CF1 135(6), in no event, mover, may a reply be timely filed in the provision of the provision of the communication of the provision of the provision of the provision of the communication of the provision of the communication of the communication of the provision of the pr				N
Examiner		Application No.	Applicant(s)	- y -
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The MALING DATE of this communication appears on the cover sheet with the correspondence address — Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MALLING DATE OF THIS COMMUNICATION. Extension of time may be available under the provisions of 3 CPR 1.1380, in one vent, however, may a reply be timely filled at the SK (8) MONTH'S from the malling date of this communication. **Extension of time may be available under the provisions of 3 CPR 1.1380, in one vent, however, may a reply be timely filled at the SK (8) MONTH'S from the malling date of this communication. **Failure to reply which the eart or candidate plant of the reply will be stated, received as expensed by the state of the scenario of the	Office Action Summary	Examiner	Art Unit	
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WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Edatacinian of time may be available under the provides of 3T CPR 1.13(a). In oe event, newerer, may a reply be fined pitted after SX (6) MONTHS from the mailing date of this communication. **PRO-PRIOR to or expl is specified usor, the mailine mailable of this communication or plant of the communication of the communication or plant of the provides of the communication. **PRO-PRIOR to Office later than these months after the mailing date of this communication, even if timely filed, may reduce any searced patent term adjustment. See 37 CPR 1.704(b). **Status** 1) □ Responsive to communication(s) filed on 15 August 2005. 2a) □ This action is FINAL. 2b) □ This action is non-final. 3) □ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. **Proposition of Claims** 4) □ Claim(s) 1.26 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration. 5) □ Claim(s) is/are allowed. 6) □ Claim(s) is/are allowed. 6) □ Claim(s) is/are objected to. 8) □ Claim(s) are subject to restriction and/or election requirement. **Application Papers** 9) □ The specification is objected to by the Examiner. 10) □ The drawing(s) filed on is/are: a) □ accepted or b) □ objected to by the Examiner. Application Papers* 9) □ The drawing(s) filed on is/are: a) □ accepted or b) □ objected to by the Examiner. Application Papers* 9) □ The drawing(s) filed on is/are: a) □ accepted or b) □ objected to by the Examiner. 10) □ The drawing(s) filed on is/are: a) □ accepted or b) □ objected to by the Examiner. 20 □ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). 21 □ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). 22 □ Acknow	The MAILING DATE of this communication ap Period for Reply	ppears on the cover sheet w	ith the correspondence address	s
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Application/Control Number: 10/734,994

Art Unit: 2851

DETAILED ACTION

Applicant's arguments filed on Aug. 15 have been fully considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill (6,271,923) ("923") in view of Hill (2001/0035959) ("959").

Hill (923) discloses a microlithography method including interferometrically measuring information about a position of a microlithography stage, which carries a wafer during exposure cycle when illumination light passes, with respect to each of multiple metrology axes during a photolithographic exposure cycle (col. 46, line 56 – col. 47, 19); analyzing optical gradients caused by environmental effects produced by the photolithographic exposure cycle (col. 15, lines 13-60, and col. 46, line 56 – col. 47, 19) and applying the correction factors to subsequent interferometric measurements of the stage (col. 43, lines 8-44). Hill (923) also discloses using a single-wavelength interferometer (14).

However, Hill (923) does not disclose analyzing the position information to determine correction factors indicative of local slope on a side of the stage used to reflect an interferometric measurement beam and using at least one high stability plane mirror interferometer, at least one single beam interferometer, a dynamic single beam interferometer and a passive single beam

interferometer. Hill (923) also does not disclose the correction factors based on averaging information for multiple scans of the stage along at least a first direction.

Hill (959) discloses analyzing the position information to determine correction factors indicative of local slope on a side of the stage used to reflect an interferometric measurement beam and using at least one high stability plane mirror interferometer (para 0030-0036), at least one single beam interferometer, a dynamic single beam interferometer and a passive single beam interferometer (para 0032-33). Hill (959) also does not disclose the correction factors based on averaging information for multiple scans of the stage along at least a first direction (Fig. 1 and 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method of analyzing position information indicative of local slope on a side of the stage of Hill (959) to the invention of Hill (923) in order to provide interferometric apparatus and methods by which the shapes of on-stage reflecting elements, such as thin high aspect ratio mirrors, may be measured in-situ, after mounting, to develop correction signals that compensate for errors in optical path lengths and in beam directions related to shapes of reflecting surfaces arranged in orthogonal planes as taught by Hill (959) in para 0017.

Response to Arguments

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Peter B. Kim Primary Examiner Art Unit 2851

September 22, 2005